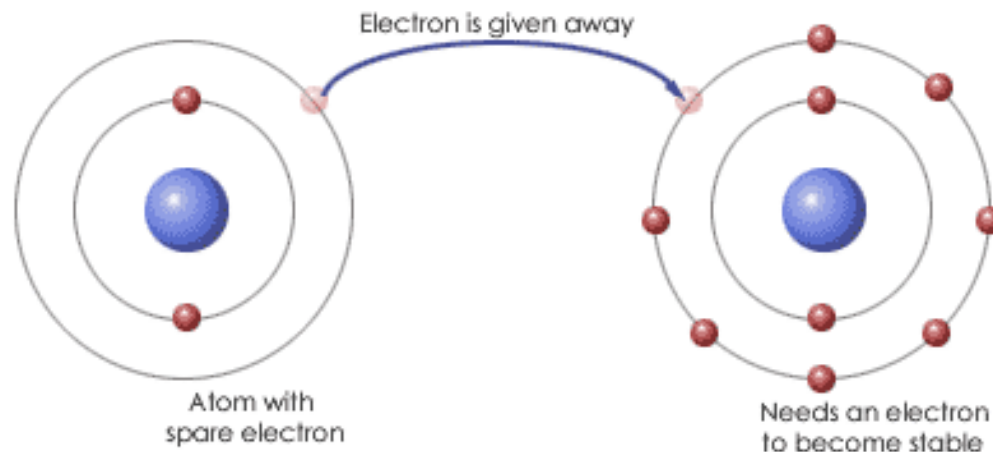


# TYPES OF BONDS



# Ionic Bonding

- Result of electrostatic attraction of oppositely charged ions
- Formed when an atom which loses electrons easily reacts an atom that has a high affinity for electrons
- Metal + Nonmetal



# Coulomb's Law

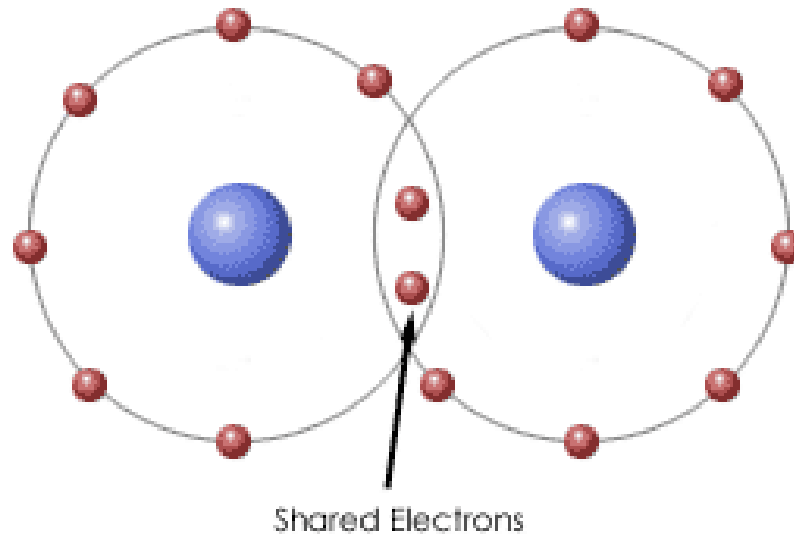
- Energy of interaction between a pair of ions

$$E = (2.31 \times 10^{-19} \text{ J} \cdot \text{nm}) \left( \frac{Q_1 Q_2}{r} \right)$$

- Energy directly proportional to charge of each ion
- Energy inversely proportional to distance between ions
- Stronger charge on ions = stronger ionic bond

# Covalent Bond

- Sharing electrons between nuclei with similar electronegativities
- Nonmetal + Nonmetal



# Predicting Bond Type

- Use difference of electronegativity

Electronegativity Difference	Bond Type
Zero ( $<0.5$ )	Covalent
Intermediate (0.5-1.7)	Polar covalent
Large ( $>1.7$ )	Ionic

